



03-12-02

Re-Exam

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:

Preikschat, et al.

Docket No. 2156-417

Patent No.: 6,287,704

Reexam Application No. 90/006,211

Date Issued: September 11, 2001

Group Art Unit: Unknown

Title: Chromate-Free Conversion Layer and Process For Producing The Same

Assistant Commissioner for Patents  
Washington, D.C. 20231

TRANSMITTAL

I. Enclosed please find the following items regarding the above referenced patent application:

1. Submission Of Prior Art Under 37 C.F.R. 1.501 for Patent No. 6,287,704 (Reexam Application No. 90/006,211) (4 sheets)
2. Certificate of Service (1 sheet)
3. Information Disclosure Citation Form For Submission of Prior Art Under 37 C.F.R. 1.501 (1 sheet)
4. Cited References

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited on March 11, 2002 with the United States Postal Service via Express Mail No. ET138958505US in an envelope address to:

Assistant Commissioner for Patents  
Washington, D.C. 20231

*Sandy Gregoire*  
SANDY GREGOIRE

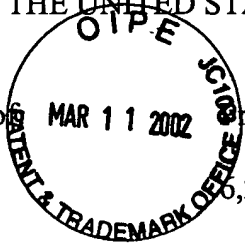
Date: March 11, 2002

Respectfully submitted,

By: *Arthur G. Schaier*  
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Patent No. 6,287,704

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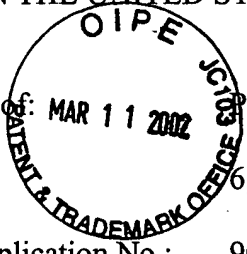
**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the foregoing Submission of Prior Art Under 37 CFR 1.501 was served by mailing a copy to John Murtaugh, Pearne, Gordon, McCoy & Granger, 1200 Leader Building, Cleveland, Ohio, 44114, attorney of record for the above issued patent, by express mail, post office to addressee, postage prepaid on March 11, 2002.

  
Arthur Schaier, Reg. No. 37,715

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#27

In re Patent of:  Preikschat et al.

Patent No. 6,287,704

Reexam Application No.: 90/006,211

Issued: September 11, 2001

Title: Chromate-Free Conversion Layer and Process for  
Producing the SameAssistant Commissioner for Patents  
Washington, D.C. 20231SUBMISSION OF PRIOR ART UNDER 37 CFR 1.501RECEIVED  
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Sir:

The undersigned herewith submits in the above identified patent the following prior art (including copies thereof) which is pertinent and applicable to the above identified patent (hereinafter the '704 patent), and is believed to have a bearing on the patentability of at least claims 1-2, 8-11, 13-19, 21-26, 29, 31, 33-34, 36-41, 43, 45-55, and 58-62 thereof:

BNF Metals Technology Centre, EP 0 034 040 A1, August 19, 1981 (hereinafter the '040 patent).

The undersigned filed a request for reexamination in the above identified patent, Reexamination Application No. 90/006,211, on January 25, 2002, and has become aware of the existence of the '040 patent since that time. It is respectfully requested that this additional prior art be brought to the attention of the Examiner chosen to reexamine the '704 patent and considered in the reexamination.

It is believed that the '040 patent has a bearing on the patentability of claims 1-2, 8-11, 13-19, 21-26, 29, 31, 33-34, 36-41, 43, 45-55, and 58-62 of the '704 patent. The earliest possible priority date for the '704 patent is April 19, 1996. As is readily seen, the '040 patent was published more than one year prior to the earliest priority data of the '704 patent and is therefore available as a prior art reference under 35 U.S.C. 102(b) and 35 U.S.C. 103.

Insofar as claims 21-29, 31, 36-41, 43, 45-59, and 61-62 of the '704 patent are concerned, the '040 patent clearly anticipates the claimed subject matter under 35 U.S.C. 102(b).

As to claims 21 and 39 of the '704 patent, the '040 patent discloses a method for producing a conversion layer that is chromium(VI)-free and that affords at least the corrosion protection of chromium(VI)-containing yellow chromations. On page 9, lines 14-27, the '040 patent teaches that the conversion coatings contain  $\text{Cr}^{\text{III}}$  ions and may also contain additional ions that do not have adverse effects on the conversion coatings or interfere with the other components in the system. The '040 patent expressly states that  $\text{Cr}^{\text{VI}}$ ,  $\text{Ni}^{\text{III}}$ , and high oxidation state Mn ions are excluded from solutions used to carry out the method of the invention. Examples 15-18 and 22, beginning on page 26 of the '040 patent, disclose suitable levels of corrosion protection (100+ hours in a neutral salt spray test). The treating solutions disclosed by the '040 patent contain  $\text{Cr}^{\text{III}}$  and a weak complexing agent. Typical weak complexing agents include hypophosphite ions, acetate ions, formate ions, citrate ions, and glycine and glycollate ions. The weak complexing agents disclosed by the '040 patent are the same as several of the chelate ligands disclosed by the '704 patent, and would therefore have the same or similar ligand replacement kinetics. The '040 patent, on page 5, lines 10-15, discloses that when a weak complexing agent is used, the concentration of the  $\text{Cr}^{\text{III}}$  ions is within the range of about 0.5 to 20 g/l as the metal ion.

As to claims 22-23 and 40 of the '704 patent, the '040 patent, on page 10, lines 6-10 discloses that typical substrates include zinc surfaces.

As to claims 24-28 and 54-57 of the '704 patent, the '040 patent, on page 12, lines 2-11, discloses that the solution is normally at ambient temperature, but that higher solution temperatures may be employed. In the absence of a weak complexing agent for metal ions, the temperature should not be above 50°C, and with a weak complexing agent, temperatures up to about 80°C can be tolerated.

As to claims 29, 31, 41, and 43 of the '704 patent, the '040 patent, on page 5, lines 23-30, discloses weak complexing agents for the treating solution, including hypophosphite ions, acetate ions, formate ions, citrate ions, and glycine and glycollate ions.

As to claims 36-38 of the '704 patent, the '040 patent, on page 16, lines 12-21, teaches that period of time of contact will depend on the thickness of the layer desired and is generally from about 5 seconds to 20 minutes, and more preferably is from about 30 seconds to 5 minutes.

As to claims 45-47 of the '704 patent, the '040 patent on page 7, lines 5-10, discloses that the treating composition contains an oxidizing agent such as sodium nitrate. The '040 patent, on page 9, lines 6-27, teaches that the treating composition may also contain chloride ions or an additional metal ion such as Mg, Al, Zn,  $\text{Mn}^{\text{II}}$ ,  $\text{Ti}^{\text{III}}$ , or  $\text{Ti}^{\text{IV}}$ .

As to claims 48-51 of the '704 patent, the '040 patent, on page 5, lines 10-15, discloses that when a weak complexing agent is used, the concentration of the  $\text{Cr}^{\text{III}}$  ions is within the range of about 0.5 to 20 g/l as the metal ion.

As to claims 52 and 53 of the '704 patent, the '040 patent, on page 13, lines 5-30, discloses pH values within the claimed range.

As to claims 58-59 and 61-62 of the '704 patent, the '040 patent, on page 21, Example 2, discloses a liquid concentrate for producing a passivating solution. As discussed above, the '040 patent discloses that zinc surfaces can be coated with the treating solution.

Insofar as claims 1-2, 8-11, 13-19 and 33-34 are concerned, the claimed subject matter of the '704 patent would be obvious in view of the '040 patent under 35 U.S.C. 103 and/or inherently anticipated under 35 U.S.C. 102(b).

As to claim 1, as discussed above, the '040 patent teaches a conversion layer comprising chromium(III), where the conversion layer is chromium(VI)-free and forms a conversion layer on zinc or zinc alloy. Because the layer provides improved corrosion resistance, it is inherent that the coating would be a substantially coherent corrosion layer. In addition, the '040 patent discloses a level of corrosion protection of greater than 100 hours in a neutral salt spray test. The '040 patent does not require silicate, cerium, aluminum, and/or borate in the composition to achieve the specified level of corrosion protection. The '040 patent, on page 19, lines 1-2, discloses conversion layers having a thickness of 0.01 to 5  $\mu\text{m}$  (10-5,000 nm). The chromium content in the conversion layer is dependent on the amount of chromium in the passivation solution. The '040 patent discloses the same or similar chromium(III) passivation solutions resulting in a trivalent chromium conversion layer having the same level of corrosion protection as the '704 patent. Therefore, the chromium content across the conversion layer and the chromium index in the layer of the '040 patent would inherently be similar to the '704 patent.

The '040 patent treats the same surfaces with the same chemicals under the same conditions. Therefore, the same result must occur. Because the '040 patent uses the same or similar chromium(III) passivation solutions as disclosed by the '704 patent, it is inherent that the treating solutions would have similar properties and produce similar results, including similar levels of corrosion resistance. *See Continental Can Co. USA Inc. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746 (Fed. Cir. 1991), holding that anticipation exists where the claimed element naturally flows from the process taught in the cited references; *Ex Parte Blattner*, 2 USPQ2d 2047 (Bd. Pat. App. & Int'f 1987) ("[A] *prima facie* case of obviousness arises from the expectation that compounds similar in structure will have similar properties."); *Ex Parte Chwang*, 231 USPQ 751 (Bd. Pat. App. & Int'f 1986) ("[I]t is not structural similarity alone that gives rise to obviousness, but the concomitant assumption that the structurally similar compounds will have like properties.").

As to claim 2 of the '704 patent, because the conversion layer disclosed by the '040 patent has the same level of corrosion protection as the layer disclosed by the '704 patent, and because the chemicals used are the same, the conversion layer disclosed by the '040 patent would inherently have a similar chromium-rich zone to that disclosed by the '704 patent.

As to claims 8-10 of the '704 patent, the '040 patent, on page 17, lines 12-19, teaches that freshly deposited films are soft and can be removed from the substrate by mild abrasion. The films can be hardened and made more resistant to mechanical abrasion by air-drying or by drying in an oven for a period of time.

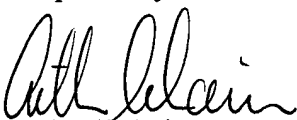
As to claims 11 and 13-14 of the '704 patent, as discussed above, the '040 patent discloses that the layer may contain an additional metal ion such as Mg, Al, Zn, Mn<sup>II</sup>, Ti<sup>III</sup>, or Ti<sup>IV</sup>. In addition, on page 14, lines 1-4, the '040 patent teaches that the layer may further contain boric acid for improved corrosion resistance. As discussed above, the layer may also contain sodium nitrate.

As to claims 15-19 of the '704 patent, as discussed above, the '040 patent discloses that the conversion layer may further comprises chloride ions, phosphate ions, nitrate ions, and carboxylic acid anions. The carboxylic acid ions would be within the general category of organic acids disclosed by the '704 patent.

As to claim 33, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have performed the passivation step more than once in order to provide additional corrosion protection to the surface.

As to claim 34, the '040 patent discloses that the treating may be carried out at ambient temperature. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have recycled rinse water from the system and to have chosen a suitable means for doing so.

Respectfully submitted,



Arthur Schaier, Reg. No. 37,715